

THE INSECT PEST SURVEY
BULLETIN

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INSECT PEST SURVEY BULLETIN

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OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR SEPTEMBER, 1929

No findings of the Mediterranean fruit fly have been reported during the month of September.

The rather serious conditions with regard to grasshoppers reported in the last number of the Bulletin have developed into serious outbreaks in the Great Plains district of North Dakota and Montana.

Serious depredations by wireworms continued to be reported from scattered localities over the entire country, the damage being particularly serious on the Pacific Coast.

The very light Hessian fly infestation reported from New York State last month apparently extends westward through Ohio. The detailed summary of the Illinois survey, on the other hand, shows a very marked increase in infestation, the average of infested straws for the State being about 15 per cent. Hessian fly seems to be on the increase also in Missouri.

Very serious depredations by corn root worms have been reported from Iowa and Nebraska. Large patches of corn are completely killed out in many districts and much corn which was not killed was lodged on account of the destruction of the roots.

The velvet bean caterpillar is practically ruining the soy bean crop in southern Louisiana and along the eastern coast of Texas. The strange feature of this outbreak is the fact that velvet beans and cowpeas adjacent to ruined fields of soy beans are practically undamaged.

Cowpeas in the coastal plains district of the Carolinas are so seriously infested by the cowpea curculio that many growers are not recovering their seed.

During August the alfalfa weevil was discovered in the vicinity of Medford, Oregon. This appears to be a commercial jump as the nearest known infestation is 200 miles distant in eastern Oregon. This insect was also found for the first time in Alpine County, California, this being an extension of the Carson Valley, Nbr., area.

Owing to a partial third brood of the codling moth developing in the Middle Atlantic, East Central, and West Central States, late injury by the worms is very noticeable, even in well sprayed orchards. Serious conditions have also been reported from Nevada and Washington.

More damage by the apple maggot than usual is being observed in the New England States.

The apple fruit worm (Argyrosthia conjugella Zell.) has been observed for the first time in the Montesano section of Washington.

A very interesting case of the complete control of an insect pest by its natural enemies is reported from Ohio, where the apple flea weevil has been practically eliminated this year by its hymenopterous parasites.

The oriental fruit moth is recorded for the first time from the northern end of Indiana and also from Amherst, Mass., and is quite generally reported from practically the entire infested region.

The grape berry moth has very materially increased in abundance in the Lake Shore district of Ohio and over practically the entire State of West Virginia.

The fall webworm is unusually abundant throughout the South Atlantic and Gulf Coast region extending up the Mississippi Valley into Missouri.

The European weevil, Brachyrhinus cribricollis Gyll., has been discovered on citrus and privet in Los Angeles County, California.

The citrus whitefly is being reported as very abundant from Florida and the Gulf Coast section.

Very serious damage by the garden webworm to alfalfa is reported from Iowa and Nebraska.

The curculionid beetle, Tyloderma morbillosa Lec., is recorded for the first time as a strawberry pest in Washington.

The pickle worm appears to be much more serious than usual in the Northern part of its range, reports coming from the East Central and the West Central States. The insect is recorded for the first time from Nebraska.

Two heretofore unrecorded species of springtails are doing commercial damage to mushrooms in Minnesota and Missouri. The species in Minnesota belongs to the genus Achoreutes and the species in Missouri to the genus Schottella.

tent

A very interesting account of an outbreak of the great basin/caterpillar appears in this number of the Bulletin. The outbreak took place near Mount Shasta, California, and the worms were so numerous that they prevented railroad trains from making the grades. Special equipment was required on the locomotives to meet the emergency.

The satin moth has been recorded for the first time in woodland districts in New England.

The hemlock spanworm has killed practically all of the hemlock in the resort region of Michigan and is now seriously damaging hardwood.

A very heavy infestation by the two-lined prominent (Hemerocampa bilineata Pack.) attacking beech and oak is reported from Michigan.

A considerable part of the White Mountain district of New Hampshire, a large part of Vermont and Maine, and parts of Massachusetts seem to be well infested by the birch leaf-mining sawfly.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR SEPTEMBER, 1929

The general application of control measures against the European corn borer has had very favorable results in Ontario. In spite of this, observations indicate that in Kent and Essex counties sweet corn was more heavily infested than last year, although in the case of field corn the increase was only slight. The presence of this insect in Quebec has not yet caused serious crop injury. In New Brunswick, in Sunbury and Queens Counties, the infestation is extremely light. As a result of scouting, the borer has been found in Nova Scotia, in Yarmouth, Digby, and Annapolis counties.

The grasshopper infestation in British Columbia, while not extremely severe as in 1926, again shows a tendency to increase. The exceedingly dry summer enabled the grasshoppers to lay their eggs successfully. Moderate outbreaks of grasshoppers also are reported from southern Quebec and southeastern Prince Edward Island.

Severe injury by white grubs to a variety of field and garden crops is anticipated over a fairly wide area in southern Quebec, in late fall, and during the spring of 1930.

Weather conditions have been favorable to the development and increase of the wheat-stem sawfly in southern Manitoba, but loss to wheat and rye does not exceed a few thousand dollars for the whole province. Damage to wheat by this species, in Saskatchewan, is believed to be moderately severe generally throughout the infested areas. Although the infestation is not so great as in former years the rate of damage appears to be unusually high.

Heavy infestations of the turnip aphid are reported from districts of southern New Brunswick and locally in southern Ontario. The pea aphid has been reported in great numbers north of Lake Ontario in the counties of Prince Edward, Northumberland, and Durham, and also in southern Quebec.

There is a heavy infestation of the imported cabbage worm in southern Manitoba, resulting in the probable destruction of half the cabbage crop in farm gardens. The infestation covers all districts of Manitoba south of the main line of the Canadian Pacific Railway, becoming less northward, but being present at Swan river, north of latitude 52°.

During the summer the tarnished plant bug occurred in very injurious numbers in southern Ontario, causing considerable damage to garden plants and nursery stock. Particularly severe injury was caused to the celery crop.

In districts of southern Saskatchewan, the bertha armyworm, Barathra configurata Wlk., caused considerable damage to cabbage and flax and some injury to corn and other crops. The infestation apparently is not so extensive nor the damage so severe as in 1928, but this species is probably the most severe pest of cabbage this season in the area involved.

An outbreak of the zebra caterpillar has been reported from districts of southern New Brunswick, southern Quebec, and Ontario, affecting cruciferous plants and a variety of other flowering plants and vegetable crops.

The European red mite has been very conspicuous in the Niagara district, Ontario, particularly in plum orchards, and also along the St. John River Valley, New Brunswick, in apple orchards. An outbreak of the red spider, Tetranychus telarius L., occurred in all parts of Manitoba, south of latitude 52°, affecting raspberry, currant, bean, pea and many other plants.

In addition to the heavy outbreak of the green apple aphid in southern Ontario already reported, a large percentage of the apple orchards in the province suffered injury from the rosy aphid, Amuraphis rosaeus Baker.

A heavy outbreak of the apple maggot in many parts of Ontario, east of Toronto, was prevented by spraying. There has been a greater menace from this species in Ontario during the last four years than in any previous period in the past twenty years.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

Florida

J. R. Watson (September 23): Grasshoppers are doing considerable damage to citrus over Florida.

South Dakota

H. C. Severin (August 30): The outstanding outbreak in South Dakota at the present time is an outbreak of grasshoppers. Melanoplus femur-rubrum DeG., M. differentialis Thos., M. bivittatus Say, and M. atlantis Riley are very abundant in Lyman, Jones, Jackson, Pennington, Mandak, Stanley, Hughes, Haakon, Buffalo, Brule, and Gregory Counties, attacking alfalfa chiefly.

Nebraska

M. E. Swenk (September 3): During the first half of August grasshoppers continued to be numerous and injurious in vegetable and flower gardens in the vicinity of Lincoln and around parts of Omaha, Fremont, Columbus, Kearney, and elsewhere in the Platte Valley. Some damage to alfalfa was reported from Thayer County late in August. Injury was serious in some alfalfa fields in southwestern Nebraska from Banner and Deuel Counties to Chase and Hayes Counties. Some apprehension is felt by farmers in this area that the grasshoppers may do severe damage to the winter wheat planted this fall, as the insects are more numerous than usual at this time.

W. S. Greene, jr., and L. C. Baumhofer (September 2): Upon examination of yellow pine at the western edge of the plantations, a replant on the 1927 burn, we found most of the trees dead. The heavy loss appeared to be the work of grasshoppers. Many of the trees had almost the entire stem girdled, others had their stems chewed off above the ground, and still others had most of the foliage destroyed as well as being partially girdled. A count of several rows showed a loss of about 86 per cent out of 1,200 trees examined while some of the remaining trees were partially injured in the part of the plantation examined. Damage to this year's planting on another area appeared to be much lighter, probably about one-third of the above. This is the most severe damage of this type noted thus far since field work began at Halsey. A few grasshoppers caged with small seedlings have caused similar damage to these trees. Most of the destruction probably occurred in July as there was no damage when the plantation was examined in June and there is little fresh work now. Trees planted in the last two or three years are most susceptible and yellow pine is damaged most severely.

Missouri

K. C. Sullivan (September 23): Grasshoppers are very abundant. The species include Melanoplus femur-rubrum DeG., M. differentialis Thos., Conocephalus sp., and Arphia pseudo-nictana Thos.

- Colorado C. P. Gillette (September 21): Grasshoppers are moderately abundant in northeastern Colorado, many calls for grasshopper poisoning having been received.
- Montana T. B. Mabee (September 21): Grasshoppers, Melanoplus mexicanus bivittatus Say et al., have increased their populations over the entire eastern half of the State and are very abundant in Roosevelt, McCone, Richland, Dawson, and parts of Toole, Liberty, Chouteau, Pondera, Hill, and Cascade Counties, and in one place only, Lake County, west of the Divide.
- California Monthly News Letter, Los Angeles County Agricultural Comm., Vol. 11, No. 8, August 13: Continued periodic inspections of what have been grasshopper breeding grounds in the Antelope Valley during previous years indicate that owing to the almost entire absence of "choppers" in those localities there will not be any necessity for control operations this season.
- Washington Wm. T. Baker (August 29): A report was received that grasshoppers were thick in one of the tall office buildings in Tacoma. That appeared to be this species (Melanoplus atlantis Riley) was found in fairly large numbers clinging to the walls and on the sidewalks. These had likely bred in the outover region west of Tacoma.
- IRETERNS (Icteridae)
- South Carolina H. R. Brunson (September 24): Horistenotus uhlerii Horn has been very destructive this season in Hampton and surrounding counties.
- Iowa C. J. Drake (August 29): Melanotus sp. has been doing considerable damage to corn in eastern and southeastern Iowa. The growers of Davis County estimate the damage to average over \$200 per farm or over \$400,000 for the county.
- Alabama C. T. Doen and L. L. Chom (August 30): On August 30 some soil sifting for Heteroderes laurentii Guer. was conducted near Foley. A series of soil plots 12 in. square and 4 in. deep were sifted. The populations of larvae were found to range from none in some of the plots where Irish potatoes had been grown as the spring crop and followed by late corn, up to 9 larvae per square foot in turnips. Old corn and heavily trussed hedge rows showed an average of 3 larvae per square foot. It would seem that adults gradually moved over to pollen-bearing plants such as corn and the various common native grasses. Larvae of all sizes from the very smallest to the full-grown ones were found. However, the greater number were approximately the same size, indicating a peak of hatching. Larvae of this species attain almost full size in two or two and one-half months.

- Texas F. H. Thomas (September 24): Very abundant on wheat in certain districts of the panhandle.
(August):
- Wyoming H. L. Sweetman/ Moderately abundant at Evanston.
- California S. Lockwood (August 30): Wireworms of an undetermined species destroyed the first planting of tomatoes near Sacramento during May. On the 13th of this month 94 per cent of the plants were injured in a field of 140 acres. A later planting did not receive much attention from these insects. On July 15 Messrs. Cooper and Wright, of the San Joaquin Agricultural Commission, and this reporter found a field of green beans which were attacked by wireworms to a degree that no plants were found free from the borings.
- Washington Wm. M. Baker (September 18): A field of potatoes in Puyallup was visited in which practically every hill had at least one infested tuber and some had three and four tubers injured. Three species of wireworms were taken out of the hills, but only one was actually found in the potato. These have been sent to M. C. Lane for determination. Some of the injury had been caused early enough to have all healed over though most of it was recent and much more extensive than the early damage, many potatoes being nearly destroyed. (September 19): A patch of about one-half acre of iris in Puyallup in light, sandy soil has been attacked. About 75 per cent of the sizes known as large rounds and slabs and about 15 per cent of the size known as pea size were injured. The feeding punctures are not particularly deep, being from 2 to 10 mm. in depth.

WHITE GRUBS (Phyllophaga spp.)

- Connecticut R. B. Friend (September 18): Larvae of P. fusca Froul. have killed grass in yards and lawns at Glastonbury.
- Ohio J. S. Houser (September 24): White grubs are very abundant. Heavy flight in May.
- Indiana J. J. Davis (September 28): White grubs damaged a hedge at Attica as reported on September 19.
- Illinois J. P. Flint (September 19): The 1929 brood is very abundant in central and northern Illinois.
- Wisconsin E. L. Chambers (September 19): Scarce; one serious infestation was reported in a nursery at Hartland.

BERTH ARMYWORM (Spodoptera configurata Walk.)

- Montana W. B. Mabce (September 21): Moderately abundant in the Bitter Root Valley and in a few isolated spots east of the Divide in Custer and Powder Counties.

VARIEGATED CUTWORM (Lycophotia margaritosa saucia Hbn.)

Arizona

C. L. Barnes (August 25): Very abundant and caused severe injury to alfalfa, corn, potato, tomato, wheat, and cabbage in Navajo and Apache Counties. It also attacked beet, carrot, grape, various grasses and weeds, and ornamental plants. The worms in almost every case had assumed the armyworm habit and several acres of alfalfa were completely eaten. Almost all cabbage observed was ruined. The worms were reported by the county agents to be much more abundant this year than normally.

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli Guen.)

Arizona

C. L. Barnes (September 25): Severe injury to young lettuce in one 40-acre and two 20-acre plantings west of Phoenix has been observed.

CEREAL AND FORAGE - CROP INSECTS

WHEAT AND OATSMESSIAN FLY (Phytophaga destructor Say)

Ohio

T. H. Parks and J. S. Houser (September 24): Scarce; fewer than for 10 years. Some found in Butler County.

Illinois

W. P. Flint (September 19): The annual wheat survey made by the entomologists of the Natural History Survey and Federal Bureau of Entomology cooperating has just been completed. The survey this year shows a very marked increase in the Hessian fly in the central and southern counties. There is also an increase in northern Illinois, but it is not so great and the infestation in this section is not so heavy as in the central and southern counties. The infestation runs generally from 8 to 35 per cent and will average around 15 per cent. The group of eastern counties showing heaviest infestation last year has about the same infestation this year. This includes Edgar, Clark, and Crawford Counties. The following table shows the percentages of infestation covered by the survey:

County		County	
Adams	9.3	Clinton	15.6
Brown	25.0	Colas	6.2
Bureau	6.0	Crawford	41.0
Cass	33.3	DeKalb	2.6
Champaign	3.4	Douglas	3.2
Christian	19.3	Edgar	16.0
Clark	31.0	Ford	.8

Fulton	16.7	Montgomery	22.0
Gallatin	8.0	Morgan	10.0
Greene	33.7	Moultrie	20.0
Grundy	1.5	Ogle	2.5
Hancock	9.7	Platt	8.6
Henry	2.2	Randolph	12.0
Iroquois	3.0	Rock Island	2.0
Jackson	5.7	Sangamon	12.7
Jersey	18.3	Schuyler	31.0
Kankakee	.5	Scott	14.0
LaSalle	1.0	Shelby	2.6
Lee	.7	St. Clair	10.0
Livingston	.6	Tazewell	13.4
McDonough	13.0	Vermilion	9.0
McLean	6.0	Whiteside	1.6
Macoupin	22.2	Will	.4
Madison	22.5	Williamson	11.0
Mason	13.2	Woodford	7.4
Menard	24.0		

Missouri L. Haseman (September 23): Moderately abundant, campaign of control under way.

K. C. Sullivan (September 23): Scarce, but on the increase.

WHEAT JOINT WORM (Harmolita tritici Fitch)

Illinois W. P. Flint (September 19): The annual wheat survey showed the lightest infestation that has occurred any time for the last 10 years, Whiteside and Gallatin Counties being the only ones in the State with an appreciable infestation.

WHEAT STEM SAWFLY (Cephus cinctus Nort.)

North Dakota J. A. Munro (September 23): A sample of Marquis wheat showing wheat stem sawfly injury was received from Goodrich, Sheridan County, on September 17.

ARMYWORM (Cirphis univincta Haw.)

Iowa C. J. Drake (August 29): The armyworm occurred in considerable numbers in the counties of Emmet, Kossuth, Humboldt, Ida, Lyon, Monona, O'Brien, Winnebago, and Woodbury. A considerable amount of damage was done to oats and to a much less extent to corn. In several instances farmers reported that fields containing 30 acres of oats had been totally destroyed before they were aware of their presence.

CORN

CORN EAR WORM (Heliothis obsoleta Fab.)

- Connecticut W. L. Britton (September 24): This insect seems to be more abundant than usual on corn in New Haven, Woodbridge, and Plainville.
- Wisconsin E. L. Chambers (September 1): Sweet corn and pop corn are being injured to some extent in Racine, Milwaukee, Kenosha, and Walworth Counties, according to inquiries received for its control and specimens submitted.
- Iowa C. N. Ainslie (August 28): Field corn in the district of Sioux City seems unusually free from this pest this season. Early sweet corn was badly injured.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

- Florida J. R. Watson (September 23): The fall armyworm has been more or less abundant in the western part of the State for some months and is beginning to make its appearance in certain isolated regions in the peninsular part of the State. The damage is chiefly to grass and sugar cane.
- Mississippi R. W. Harned (September 25): Injury to sugar cane at Wachez and to corn at Metcalf was reported on August 23.
- R. F. Colmer (September 20): We have had an infestation in Moss Point and Pascagoula. In some cases they have eaten the grass from entire lawns.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

- Rhode Island A. L. Stene (September 25): Moderately abundant; spotty second brood abundant in some localities.
- Ohio T. H. Parks (September 23): Moderately abundant; increased in northwestern counties.

CORN ROOT WORMS (Diabrotica spp.)

- Iowa C. J. Drake (August 29): D. duodecimpunctata Fab. and D. longicornis Say are abundant over the entire State and here and there are causing a considerable amount of commercial damage. In several instances the roots were almost completely destroyed and after a heavy rain the corn fell to the ground. The western corn root worm seems to be the more abundant.
- Kansas R. L. Parker (August 29): The western corn root worm has been reported as cutting roots of corn at Lebanon.

Nebraska

M. H. Swenk (September 3): During the month of August there was much serious trouble with corn root worms in several sections of the State. The corn was killed out in large patches, and there were many fallen stalks in the affected fields. Two years ago (1927) there was similar trouble with this pest, but little or none last year. D. longicornis Say was especially troublesome in Valley, Sherman, and Buffalo Counties in the central part of the State, and also in Koya Paha County to the north and in Webster, Nuckolls, and Jefferson Counties along the southern boundary of the State. The Colorado/corn root worm (D. virgifera Lec.) was similarly troublesome in southwestern Nebraska (Hitchcock County).

FLOWER BEETLES (Euphoria spp.)

North Carolina

C. H. Brannon (September 4): Flower beetles of this genus are causing noticeable injury to corn in Caswell County.

SOY BEANS

VELVET BEAN CATERPILLAR (Anticarsia gemmatilis Hbn.)

Louisiana

W. E. Hinds (September 20): This insect is very abundant in the southern half of the State. It has appeared this year in greater abundance than ever before, stripping soy beans as completely as the cotton leaf worm does cotton. Outbreak appeared first in the vicinity of Jeanerette and stripping became general at Baton Rouge by the last of August. Another generation is in prospect. Poisoning has checked worm feeding promptly with some burning of foliage which has not been nearly so serious as the worm stripping. Where worm feeding was stopped by poisoning the buds were saved and started new growth promptly. Where worms were not poisoned and were abundant they frequently destroyed buds so completely that new foliage was not formed. The seed crop of several varieties of soy beans will be materially reduced in Louisiana. Natural control of these worms has been noticed especially through the feeding of birds, the attack of wasps, and attack of a white fungus, presumably Empusa rileyi, which is causing the death of large numbers of larvae.

T. E. Holloway (September 17): Messrs. J. W. Ingram and W. A. Douglas have found an infestation ranging from Napoleonville through southern Louisiana to the Texas line. The only crop attacked is soy beans, except cotton growing next to soy beans. Unless checked, the caterpillars defoliate the soy bean plants and then feed on the remaining stems, finally destroying all life. Curiously enough, neither velvet beans nor cowpeas, even when growing next to soy beans, is attacked.

J. W. Ingram (August 27): On August 27 a plantation was

visited in Assumption Parish where 100 acres of soy beans had been completely defoliated. All leaves and small twigs had been eaten, so the plants resembled sticks stuck up in the field. Only a very small number of worms were found, but 6 pupae were found after digging in 1 square foot of soil. The owner stated that the worms appeared so suddenly and ate so fast that his beans were destroyed before the worms were noticed; 50 acres of soy beans planted in stubble cane were only partially defoliated. According to the owner of this plantation, the worms appeared in destructive numbers in soy-bean fields throughout this parish and adjoining ones.

Texas

T. E. Holloway (September 17): A report from Beaumont states that this insect is now to be found near there.

COMPEAS

COMPEA CURCULIO (Chalcodermus aeneus Boh.)

North Carolina
and
South Carolina

W. A. Thomas (July 15): The cowpea pod weevil has been unusually destructive to cowpeas in practically all of the coastal section of the Carolinas. In the vicinity of Bennettsville, S. C., many growers claim that they are scarcely getting the seed they planted as a result of this insect's work. Single pods were observed to have more than 50 punctures for feeding and oviposition.

GRASS

CUTWORMS (Noctuidae)

Arizona

O. L. Barnes (September 18): Severe damage to golf greens of bent grass by cutworms near Phoenix has been observed. The damage ranged from about 15 to 100 per cent considering the greens individually. In some cases no grass at all was left. Feltia annexa Treit., Agrotis ypsilon Rott.?, Prodenia ornithogalli Guen., and an undetermined species were present. A. ypsilon was present in greatest numbers, followed closely by F. annexa, while the latter two species were relatively much less numerous. The golf course was desert land a year ago.

A SCALE INSECT (Aclerda obscura Parrott)

North Carolina

C. H. Brannon (September 2): This scale was collected in Moore County near Cameron on sandhill dominant grass (Aristida stricta). Dr. H. Morrison who identified the specimen furnished the following information: "Appears to be our first definite record since original publication of species. Compared with co-type."

ALFALFA

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

Nevada G. G. Schweis (September 13): Adults are seeking hibernation quarters.

Oregon D. C. Mote (August): The alfalfa weevil was discovered in the vicinity of Medford early in July. This a commercial jump since the nearest known infestation is some 200 miles from Medford in eastern Oregon. Rockwood and Mote made a preliminary survey, determining the limits of the infestation at Central Point on the north, Phoenix on the south, about 2 miles west and two and one-half miles east of Medford. One peculiar feature of the infestation was the lateness of weevil development. The larvae were feeding and doing damage to the second crop of hay which was nearing maturity.

California S. Lockwood (August 30): Mr. Geo. Wilson and the writer found the alfalfa weevil for the first time in Alpine County, the infestation being an extension of the area of the Carson Valley which has been infested for a longer period. This insect was also found to have extended its area by 1 mile within a year in Lassen County.

THREE-CORNED ALFALFA HOPPER (Stictocephala festina Say)

Arizona O. L. Barnes (September 22): Moderately abundant in the Verde Valley in Yavapai County. Abundant in some fields near Phoenix.

GARDEN WEBWORM (Loxostege similalis Guen.)

Iowa C. J. Drake (August 29): Since my last report we have had a large number of complaints from a large district in the western portion of the State. It has been reported in Adair and Dallas Counties in addition to the counties I named in my previous letter. Many new fields of alfalfa were very seriously damaged or totally destroyed. Quite a number of growers reported that fields of 30 or 40 acres were entirely riddled.

Nebraska M. H. Swenk (September 3): An outstanding insect pest of the month was the garden webworm, the injuries of which appeared in the alfalfa fields over an area enclosed by Douglas, Otoe, Fillmore, Adams, York, and Butler Counties, and also in Antelope County near Neligh and Brunswick about August 7 or 8 and did much damage during the following week or 10 days. Complaints of injury ceased abruptly immediately after the middle of August. Many fields were heavily infested and by the time the larvae were matured were so eaten and webbed that they appeared as if they had been frostbitten or swept

by fire. In Antelope County, Russian thistles and pigweed were much attacked along with the alfalfa. Where the second cutting had been made about the middle of July the damage was little or none, but in the affected area there was considerable in fields cut late in July.

CLOVER

CLOVER APHID (Anuraphis bakeri Cowan)

Colorado C. F. Gillette (September 21): The clover aphid was very abundant ^{and} did considerable damage to clover seed in the lower Arkansas Valley the past summer.

F R U I T I N S E C T S

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

Virginia W. J. Schoene (September 21): A partial third brood has appeared in northern and central Virginia this season. This brood increases the number of wormy apples even in sprayed orchards.

Ohio T. H. Parks (September 23): This insect has increased over last year and "stings" of the late worms mark apples on some of the best sprayed orchards.

J. S. Houser (September 24): Moderately abundant throughout the State.

Indiana J. J. Davis (September 23): Reported as very abundant at New Castle on September 13. It is more abundant and destructive this year than last throughout southern Indiana.

Illinois W. P. Flint (September 19): Late worms are more abundant than usual.

Kentucky W. A. Price (September 20): Moderately abundant on apple over western and northern Kentucky.

Missouri L. Haseman (September 23): Late pin worms have shown up in unusual abundance in well sprayed orchards, though they are not so abundant as a year ago.

K. C. Sullivan (September 23): Very abundant.

Arkansas D. Isely (September 20): Became very abundant during the latter part of August and early September owing to favorable

weather conditions. The infestations are probably heavier than at any time since 1926.

- Oklahoma O. E. Sanborn (August 31): Moderately abundant.
- Colorado C. P. Gillette (September 21): Very abundant, as usual, in all apple-growing sections.
- Nevada G. G. Schweis (September 18): Very abundant, about 90 per cent of the apples being damaged.
- Washington E. J. Newcomer (September 21): Owing to unseasonably warm weather during the first three weeks of September, the codling moth has remained more active than usual in eastern Washington, and much damage to apples from late worms is anticipated.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

- Massachusetts A. I. Bourne (September 26): Up to early August there had been little indication of any serious abundance and an attack appeared to develop to its height in August and early September, which is much later than we have been accustomed to experience. For this reason many growers had neglected to apply the later spray with the result that some midseason varieties, such as Wealthy and, to some extent, McIntosh, have shown a considerable amount of infestation.
- Connecticut M. P. Zappe (September 28): Wormy apples are very common in the markets in New Haven. Considerable damage has been reported from Litchfield County. About 70 per cent of the crop appears to be damaged at Durham.
- Ohio T. H. Parks (September 23): The apple maggot is generally scarce in Ohio, but becoming more abundant in the northern part of the State.
- Arkansas P. H. Millar (September 23): Found in peach fruit in Hot Spring County.

APPLE FRUIT WORM (Argyresthia conjugella Zell.)

- Washington Wm. W. Baker (September 6): Four apples were sent in by I. H. Hawley of Montesano. These were all infested and three quite seriously; the fourth was still green and had only a small amount of damage. At this time none of the larvae were over 7 mm. in length and some were only 4 mm. Mr. Hawley states that this is the first year that growers in that district have noticed injury of this type.

LEAFHOPPERS (Cicadellidae)

- Virginia W. J. Schoene (September 21): Typhlocyba pomaria McAtee

is present in considerable numbers in some apple orchards. The foliage has been injured to the point that the leaves have a grayish appearance.

Ohio J. S. Houser (September 24): Apple leafhoppers are moderately abundant.

T. H. Parks (September 18): Bad in one large orchard in Lucas County, where 12 sprays were applied during the season. More abundant in southern Ohio than last year.

Arkansas D. Isely (September 20): Erythroneura obliqua Say is very abundant in northwestern Arkansas.

APPLE FLEA WEEVIL (Orchestes pallicornis Say)

Ohio J. S. Houser (September 24): One of the outstanding insect developments in Ohio this season has been the almost complete elimination of the apple flea weevil by hymenopterous parasites. Up until this year the rate of increase by this insect from season to season was quite disturbing, but in June hymenopterous parasites working in larvae and pupae almost completely eradicated the brood so that late in the summer the insect was scarcely to be encountered.

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

Arkansas P. H. Millar (September 23): Found in apple in Pulaski County.

GIANT ROOT BORER (Priomus laticollis Drury)

Arkansas S. A. Summerland (September 25): Considerable damage is being done in one orchard near Springdale. The root system of young apple and cherry trees is being destroyed and the trees blow over.

SAN JOSE SCALE (Aspidictus perniciosus Comst.)

West Virginia L. M. Peairs (September 19): Very abundant at Martinsburg.

Georgia M. S. Yeomans (September): Moderately abundant and increasing at Cornelia. Crawlers are being observed.

Ohio J. S. Houser (September 24): Generally scarce, but increasing in some parts of north-central Ohio.

Missouri L. Haseman (September 23): This insect has been breeding heavily this summer at Columbia.

Mississippi R. W. Harned and assistants (September): Very abundant in Calhoun, Chickasaw, Holmes, George, Greene, and Perry Counties.

PEACH

PEACH BORER (Aegeria exitiosa Say)

- Georgia M. S. Yeomans (September): Moderately abundant; adults are emerging and laying eggs at Cornelia.
- Illinois S. C. Chandler (September 14): Heaviest emergence recorded is taking place in southern Illinois.
- Kentucky W. A. Price (September 20): Moderately abundant on peach over the State.
- Mississippi H. H. Carpenter (September 19): Very abundant in Calhoun and Chickasaw Counties.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

- Massachusetts A. I. Bourne (September 26): We have found the oriental fruit moth in peaches at Amherst for the first time. In one orchard it is abundant enough to be causing serious loss. We have also found it in various points in Hampden County, but there were only a few larvae which indicate just the beginning of an infestation and did not represent any commercial loss.
- Ohio T. H. Parks (September 23): Very heavy increase in the northern part of the State.
- J. S. Houser (September 24): Very abundant wherever peaches are grown.
- Indiana J. J. Davis (September 23): Received from Goshen on September 11, which is our first record for the northern end of the State. This insect is now appearing generally throughout the State.
- Illinois S. C. Chandler (September 14): There has been quite a strong emergence from larvae that pupated the first of September. Very little pupation is taking place at the present time. Infestation in late peaches is much greater in parts of southern Illinois other than the section which had the original infestation, where it is about the same as in 1928.
- Kentucky W. A. Price (September 11): Very prevalent over the entire State and doing very serious damage to the peach crop.
- Arkansas P. H. Millar (September 23): There is considerable more injury to peaches in the towns than in commercial orchards. The insect was found in the following counties: Phillips, Lee, St. Francis, Cross, Greene, and Pulaski.

Mississippi R. W. Harned (September 23): Peach twigs that have evidently been injured by the larvae have been received from Lafayette, Holmes, Leflore, Copiah, Adams, Coahoma, Pike, Pontotoc, and Warren Counties.

PEACH AND PLUM SLUG (Eriocampoides amygdalina Roh.)

Arkansas P. H. Millar (September 23): Found attacking peach foliage in Phillips and Mississippi Counties.

WHITE PEACH SCALE (Aulacaspis pentagona Targ.)

South Carolina M. H. Brunson (September 24): The white peach scale is increasing in abundance; it has been found at Estil recently.

RASPBERRY AND GOOSEBERRY

RASPBERRY CANEMAGGOT (Pegomyia rubivora Coq.)

Ohio E. W. Mendenhall (September 3): Very bad in some of the raspberry patches at Piqua and causing considerable damage.

OBSURE WEEVIL (Sciopithes obscurus Horn)

Washington Wm. W. Baker (September 2): Adults were feeding on the new tips of raspberry at Elma and in many cases had cut the shoot practically in two so that the tip was dead.

GOOSEBERRY WITCH-BROOM APHID (Myzus houghtonensis Troop)

Ohio E. W. Mendenhall (September 15): Has been general on Houghton variety of gooseberry this spring and summer.

GRAPE

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

West Virginia L. M. Peairs (September 19): Very abundant over the entire State and causing much damage.

Ohio T. H. Parks (September 23): Very abundant; big increase over last year in Lake Shore district. Unsprayed vineyards have varying infestation ranging from 10 to 30 per cent of the grapes infested with second-brood worms. (Erie, Lorain, and Cuyahoga Counties.)

GRAPE LEAFHOPPER (Erythroneura comes Say)

Alabama J. M. Robinson (September 23): Very abundant at Auburn.

GRAPE TUBE GALL (Cecidomyia viticola O.S.).

Iowa C. J. Drake (August 29): The grape tube gall, C. viticola, is very common on the Beta variety of grapes at Lenox.

A RED MITE (Tetranychus sp.)

California S. Lockwood (August 30): An undetermined species of Tetranychus was responsible for early May damage to grapes in the valleys near Vacaville. T. pacificus^{McG} is becoming an increasingly important pest on grapes in the San Joaquin Valley between Lodi and Manteca and farther south. Defoliation of vines in some vineyards is severe. The infested area seems to be enlarging.

ENGLISH WALNUT

RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)

California S. Lockwood (August 30): This insect caused some leaf destruction to English walnuts in Tulare County during the fore part of August.

A WALNUT APHID (Callipterus juglandis Frisch)

Oregon D. C. Mote (July): This walnut aphid is more widespread this year in the Willamette Valley and just as abundant as last year, although in the locality where first discovered last year it is not so abundant as it was last season.

PECAN

FALL WEBWORM (Hyphantria cunea Drury)

North Carolina W. A. Thomas (September 7): Damage is unusually heavy this fall at Chadbourn. Some of the forest trees are already completely defoliated. Tents are much more numerous than last season.

Missouri K. C. Sullivan (September 23): Very abundant, especially in the southern part of the State. Defoliation of forest and fruit trees coupled with the very dry summer resulted in considerable loss.

Alabama J. M. Robinson (September 23): Abundant over the State defoliating pecans.

Mississippi Wm. L. Gray and J. Milton (September 20): Very abundant at Natchez and also in Claiborne, Jefferson, Franklin, Amite, Wilkinson, Alcorn, Tishomingo, Prentiss, and Tippah Counties.

California S. Lockwood (August 30): The webs are just beginning to appear in last of August along the banks of the Sacramento River in Sacramento and Yuba Counties.

CIGAR CASE BEARER (Coleophora fletcherella Fern.)

Mississippi H. Gladney (September 14): Very abundant in some groves of pecan in western Jackson County.

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Georgia M. S. Yeomans (September): Moderately abundant in southern Georgia.

PECAN WEEVIL (Balaninus caryae Horn)

Georgia T. L. Bissell (September 23): Adults have become scarce in pecan orchards at Experiment and their activities have practically ceased. No oviposition has been known to occur since September 10. However, adults emerged from the soil September 18. The new generation of larvae began issuing from hickory and pecan nuts September 15, which is three weeks earlier than in 1928 at Barnesville.

RED-SHOULDERED SHOT-HOLE BORER (Xylobius basilare Say)

South Carolina M. H. Brunson (September 24): The red-shouldered shot-hole borer is very abundant in pecan grove at Newberry.

AN APHID (Myzocallis fumipennellus Fitch)

Mississippi H. Dietrich (September 21): Very abundant on pecans at Lucedale.

H. Gladney (September 14): Very abundant in some groves and injury severe. (Western half of Jackson County and in vicinity of Biloxi.)

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Florida J. R. Watson (September 23): Very abundant over the entire State.

Mississippi D. W. Grimes (September 22): Moderately abundant in Durant territory on cape jasmine.

Wm. L. Gray (September 20): Very abundant in Adams, Claiborne, Jefferson, Franklin, Amite, and Wilkinson Counties on privet and cape jasmine.

K. L. Cockerham (September 22): Heavy infestation noted at Biloxi on Satsuma orange trees. Great quantities of eggs found on leaves.

H. Gladney (September 14): Very abundant in western half of Jackson County.

Louisiana

W. E. Hinds (September 20): Very abundant in southern half of the State on citrus, privet, etc.

CITROPHILUS MEALYBUG (Pseudococcus gahani Green)

California

Monthly News Letter, Los Angeles County Agricultural Commission, Vol. 11, No. 9, September 15: The mealybug situation in the field in Los Angeles County looks more favorable than it has for several seasons past. The recent protracted warm weather has not only been responsible for an appreciable mortality in the younger mealybugs, but has materially increased the activity of the liberated Cryptolaemus.

The few exceptions to this condition are the result of the presence of a large gray native ant which is particularly active in protecting the mealybug from its insect enemies, including the Cryptolaemus.

Liberations of Cryptolaemus from the Insectary are being limited to a few orchards in which necessary treatment for other pests has interfered with the completion of the control of the mealybug.

CITRUS RED SPIDER (Paratetranychus citri McG.)

California

E. A. McGregor (September): A rather thorough survey of the five southwestern counties of California brought to light the fact that the citrus red spider is extremely scarce in this region. Of 55 orchards examined, only 6 supported sufficient citrus mites to justify control measures.

FIRE ANT (Solenopsis geminata Fab.)

Arizona

O. L. Barnes (September 18): Considerable injury to young citrus trees in a grove near Phoenix observed on September 9.

WHITE LINED SPHINX (Celerio lineata Fab.)

Arizona

O. L. Barnes (September 18): Slight damage to young citrus, grape foliage, pomegranate, and a few ornamentals near Phoenix was observed August 30. The larvae, so far as observed, confined their attacks to plants in fields and yards near adjoining desert areas. Within 10 or 12 days the larvae had disappeared from the various food plants. (The main food plants seemed to be various desert or native weeds.)

T R U C K - C R O P I N S E C T S

BANDED CUCUMBER BEETLE (Diabrotica baltaeta Lec.)

Alabama K. L. Cockerham (September 20): These beetles were very abundant at this date on snap beans and sweet potatoes at St. Elmo. In fact, I have not seen them so plentiful during the entire year.

GREEN JUNE BEETLE (Cotinis nitida L.)

Mississippi R. W. Harned (September 23): Larvae were reported on September 17 as abundant in gardens at Prentiss.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

North Carolina C. H. Brannon (September): Snap beans in Currituck County are considerably damaged.

J. A. Thomas (August 30): The larvae have been unusually destructive to late corn and beans during the past month. Rather widespread damage to the tender buds of young strawberry plants has occurred recently in the Chadbourn district. It now appears that the strawberry trouble locally known as "dead crown" in young plants is partly traceable to the work of this insect.

South Carolina M. H. Brunson (September 24): Moderately abundant in beans at Luray and Clemson College.

Mississippi R. W. Harned (September 23): Severe injury to pea plants was observed at Shannon on September 11.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

Mississippi R. W. Harned (September 23): Injury to lima beans at Hattiesburg was reported on September 4 and injury to peas and lima beans at Natchez was reported on September 16.

GARDEN SLUG (Agriolimax agrestis L.)

Wisconsin E. L. Chambers (September 1): Slugs have been unusually abundant throughout the State this summer, especially during the past two weeks, doing serious damage to garden crops.

A MOLE CRICKET (Scapteriscus sp.)

South Carolina M. H. Brunson (September 24): Mole crickets, Scapteriscus sp., are moderately abundant in fall gardens in the coastal section of the State.

CHANGA (Scapteriscus vicinus Scud.)

North Carolina C. H. Brannon (September 2): This mole cricket is causing widespread damage in Carteret County.

MORMON CRICKET (Anabrus simplex Hald.)

Colorado C. P. Gillette (September 21): The Mormon cricket was moderately abundant in Moffat and Routt Counties the past summer. Apparently very successful work for the extermination of this pest has been carried on by Mr. Frank Cowan of this office in cooperation with the Bureau of Entomology.

POTATO

POTATO FLEA BEETLE (Eutrix cucumeris Warr.)

Ohio T. H. Parks (September 23): Very abundant throughout the State. A very serious pest of the potato.

Colorado C. P. Gillette (September 21): Very abundant this year in the Greeley potato-growing section.

POTATO APHID (Uroleia solanifolia Ashm.)

Ohio T. H. Parks (September 10): The potato aphid attacked the potato crop in some farms in Portage and Summit Counties, where much damage was done.

POTATO LEAPHOPPER (Empoasca fabae Warr.)

Virginia E. W. Foos (September 25): (Through Dr. Larrimer.) Dr. E. T. Smith and I are finding Empoasca spp., probably mostly fabae, unusually abundant at Arlington Farm, causing tipburn on late potatoes and yellowtop to some of the alfalfa in the varietal plantings which were cut the second time on August 5.

Wisconsin E. L. Chambers (September 1): Potato fields during recent dry weather have suffered severely from hopperburn throughout the State. Dahlia plants in gardens are being damaged and apple trees in nursery blocks have required continuous spraying to protect foliage.

South Dakota E. C. Severin (August 30): Very abundant on potato and Dahlia and attacking apple stock in nurseries.

TOMATO

A BEETLE (Blapstinus fuliginosus Csy.)

California S. Lockwood (August 30): Adults and larvae were found in tomatoes near Sacramento, during May. Many of the tomato plants had been girdled.

TOMATO WORM (Protoparce quinquemaculata Haw.)

Arizona O. L. Barnes (September 18): Very abundant on tomato plants at Joseph City and Woodruff in Navajo County as observed on August 25.

FIELD CRICKET (Gryllus assimilis Fab.)

California S. Lockwood (September 27): During the last of the month, G. assimilis has been responsible for a 10 per cent loss to ripe tomatoes in portions of a field of 170 acres near Sacramento.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

Wisconsin E. L. Chambers (September 18): Very abundant; a complete loss of many heads, probably 25 per cent in some sections of Outagamie and Racine Counties.

DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

Arizona O. L. Barnes (September 26): Abundant on cabbage and turnip at Woodruff.

CABBAGE APHID (Brevicoryne brassicae L.)

Iowa C. J. Davis (August 29): The cabbage aphid was extremely abundant in the vicinity of St. Ansgar, and in a few instances cabbage fields were very badly damaged.

Washington Wm. W. Baker (September 11): This pest is increasing in abundance on kale near Puyallup.

HARLEQUIN BUG (Murgantia histrionica Fahn)

Virginia P. J. Chapman (September 21): Three light infestations on collards and kale have been observed in the vicinity of Norfolk.

South Carolina M. E. Brunson (September 24): Moderately abundant; found all over the State and serious damage observed in places.

Mississippi M. L. Grimes (September 21): Very abundant on most host plants in Lauderdale, Newton, Kemper, Clarke, and Neshoba Counties.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

Iowa C. J. Drake (August 29): Young cabbage and radish plants in the vicinity of Cedar Rapids, Waterloo, Mason City, and Des Moines were considerably damaged. The insect occurs in considerable numbers near the larger cities, probably representing commercial jumps. Very little damage was done some distances from the larger cities or in the vicinities of small towns.

STRAWBERRY

A BEEVIL (Brachyrhinus rufosostriatus Goeze)

California S. Lockwood (August 30): Two strawberry fields in Trinity County were almost totally destroyed. This is the first record of this insect in this county.

A CURCULIO (Tyloclerma morbillosa Lec.)

Washington Wm. W. Baker (August 30): The first record I have of this pest is that in May, 1926, several specimens of the adult were sent into Pullman. In April, 1929, I visited Grand Mound and obtained a fair series of adults, and on subsequent visits eggs, larvae, and pupae were taken, eggs on May 15 and mature larvae and pupae on August 6. This morning one larva, two pupae, and one recently emerged adult were sent into the office. (Attacking strawberry).

STRAWBERRY LEAF ROLLER (Ancylis comptana Froel.)

Iowa C. J. Drake (August 29): This insect was quite abundant in the vicinity of Boone, Des Moines, and Lee County, Ia. It is quite generally distributed over the State.

STRAWBERRY ROOT WORM (Paria canella Fab.)

Ohio E. W. Mendenhall (September 10): The strawberry root worm is doing considerable damage to strawberry plants in Fairfield County. (Paria canella var. quadrinotata Say.)

California S. Lockwood (August 30): This insect destroyed a large portion of a small strawberry patch at Lodi between July 15 and the last of the month.

STRAWBERRY CROWN MINER (Aristotelia fragariae Busck)

Washington Wm. W. Baker (September 19): One field of strawberries of four different plantings near Puyallup was visited which did not yield extra well this season and in which the infestation was nearly 100 per cent. Even runner plants, not yet rooted, were infested, although the plants appeared to have made a good growth this season. Another field of a little less than an acre in extent which is located about one-fourth of a mile distant produced 8,300 lbs. this season and had only a very slight infestation.

STRAWBERRY WHITEFLY (Trialeurodes packardii Morrill)

Massachusetts J. V. Schaffner, jr. (September 25): A market gardener called our attention to a severe infestation of whitefly on his strawberry bed in Andover. He reported having first noticed the whitefly on the strawberries last year and that the present infestation was partly due at least, to his using plants from the old bed. Perhaps the drougty weather was also favorable for their increase.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

Iowa C. J. Drake (August 29): This insect did considerable damage to asparagus in the vicinities of Cedar Rapids, Waterloo, Des Moines, and Ames. It is spreading westward very rapidly and small infestations have been reported in the western part of the State.

Colorado C. P. Gillette (September 21): This insect is gradually spreading about Denver and a few specimens were found in the vicinity of Fort Collins for the first time this summer.

Oregon D. C. Mote (July): Unusually severe this year. One grower had to dump over \$2,000 worth of asparagus because of this beetle.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Virginia P. J. Chapman (September 21): There is little likelihood that appreciable damage will take place to the fall crop of snap beans grown in the Norfolk-Portsmouth area. The harvest period extends from October 1 to November 15. Most serious injury took place this year in mid-August, owing to second-brood activity. Lima beans have been injured in practically all instances owing to their long period of growth.

- North Carolina C. H. Brannon (September 3): This insect has spread more than 10 miles into Brunswick County from the direction of New Hanover County.
- Kentucky W. A. Price (September 20): Very abundant on beans in the central and northwestern parts.
- Mississippi R. W. Harned (September 23): The first infestation recorded from Union County was found on August 19 near Blue Springs.
- Wyoming H. L. Sweetman (August): Very abundant at Wheatland in garden plots.
- Colorado C. P. Gillette (September 23): Moderately abundant in northwestern Colorado and western slope, also in the Arkansas Valley.
- Arizona O. L. Barnes (September 18): Very abundant in Maricopa, Yavapai, and Apache Counties.

LIMA BEAN VINE BORER (Monoptilota pergratialis Hulst)

- Mississippi R. W. Harned (September 23): Lima beans at Greenwood were reported as seriously injured on August 20.

BEAN THRIPS (Heliothrips fasciatus Perg.)

- California S. Lockwood (August 30): Responsible for severe loss to beans during early July on islands in the Sacramento delta region near Rio Vista.

CUCUMBERS AND MELONS

PICKLE WORM (Diaphania nitidalis Stoll)

- West Virginia L. M. Peairs (September 19): Very abundant over the entire State. We are receiving many reports of damage.
- Ohio T. E. Parks (September 20): Reports state that they were feeding on gourd, squash, and pickles in Butler and Preble Counties.
- Kentucky W. A. Price (September 11): There has been an unusual amount of injury this season.
- Iowa C. J. Drake (August 29): The pickle worm did some commercial damage to pickles in the vicinity of Davenport. Smaller infestations were reported from Newton and Ames. At Ames the worms were found infesting pumpkins growing in small gardens along with pickles and melons, but no injury was done to the pickles or melons.

Nebraska

M. H. Svenk (September 3): The pickle worm was sent in for the first time from any Nebraska locality, on August 21 (Frontier County). Probably 10 or 15 per cent of the cucumbers in this field were affected.

MELON APHID (Aphis gossypii Glov.)

Ohio

T. H. Parks (September 23): Very abundant; destroyed cucumber plantings in northern Ohio.

California

S. Lockwood (August 30): During the latter part of July this insect was responsible for severe damage in the melon fields adjoining Turlock. It was also present in alarming numbers in black-eyed bean fields. Parasitism by Aphidius testaceipes Cress. of 10 per cent was noted on July 31 in many of the melon fields. The number of aphids has been reduced since that time. This insect was found to be less injurious to melons at Hamilton City on August 26.

FIELD CRICKET (Gryllus assimilis Fab.)

California

S. Lockwood (August 30): This cricket was responsible for some local damage to the hollow-center group of melons during the last of July and the fore part of August at Williams. Four individuals of Raschus thoracicus Stal. were observed preying on as many G. assimilis on the evening of August 2 at Colusa.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

Arizona

O. L. Barnes (August 25): Abundant and causing considerable damage to squash and pumpkin plants in Yavapai, Navajo, and Apache Counties.

TURNIP

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Virginia

G. E. Gould (September 21): Present in injurious numbers through the Norfolk trucking section infesting turnip, kale, cabbage, broccoli, and collards. It is easily the predominant species on these crops, possibly 20 per cent of the aphid population being Myzus persicae Sulz. and the remainder R. pseudobrassicae.

CABBAGE WEBWORM (Hellula undalis Fab.)

Mississippi

R. W. Harned (September 23): A rather heavy infestation on turnips was reported on September 5 from Ellisville.

ONION

ONION THRIPS (Thrips tabaci L.)

Iowa

C. J. Drake (August 29): The onion thrips has been extremely abundant in the State and in many instances infestation runs from 200 to 300 thrips per plant. The most damage was done in the vicinities of Pleasant Valley, St. Ansgar, and Mitchell.

California

S. Lockwood (August 30): This thrips was responsible for severe loss to onions during early July on islands in the Sacramento delta region near Rio Vista.

SPINACH

GREEN PEACH APHID (Myzus persicae Sulz.)

Virginia

G. E. Gould (September 21): This aphid is appearing on the young spinach plants that are only a week old. This species is found with Rhopalosiphum pseudobrassicæ Davis on turnip, kale, cabbage, broccoli, and collards. On kale M. persicae is of about equal importance with the turnip aphid.

SWEET POTATO

SWEET-POTATO SAWFLY (Schizocerus ebenus Nort.)

Virginia

P. J. Chapman (September 10): The brood scheduled to appear in early September, according to observations in 1928, in several sweet-potato fields around Hickory and Pungo which had been badly defoliated in late July and early August was reduced to a point that larvae were found only after several days' search. This extreme reduction in numbers is believed to be due to an undetermined tachinid parasite.

MINT

MINT FLEA BEETLE (Longitarsus menthaepagus Gentner)

Indiana

J. J. Davis (September 9): The mint flea beetle damaged spearmint at Shipshewana.

MUSHROOMS

A MITE (Linocodes antennaeipes Banks)

Ohio O. E. Gahn (September 10): This mite was found August 29 doing serious damage to cultivated mushrooms. It reduced the yield in one mushroom plant approximately three-fourths of a pound per square foot of bed space over an area of 325,000 sq. ft.

Illinois O. E. Gahn (September 10): This mite was found on June 24 doing commercial damage to mushrooms in the houses at Naperville.

Minnesota O. E. Gahn (September 10): Was found doing commercial damage to cultivated mushrooms in the sandstone caves along the Mississippi River in the vicinity of St. Paul and Minneapolis July 5.

FUNGUS GNATS (Mycetophilidae)

Illinois O. E. Gahn (September 10): Fungus gnats, Phora sp., were abundant in the mushroom houses at Naperville June 24.

Minnesota O. E. Gahn (September 10): A fungus gnat, Sciara sp., was found infesting mushrooms in the sandstone caves along the Mississippi River in the vicinity of St. Paul and Minneapolis July 5.

SPRINGTAILS (Collembola)

Minnesota O. E. Gahn (September 10): Springtails were found doing commercial damage to cultivated mushrooms which are being grown in the sandstone caves along the Mississippi River in the vicinity of St. Paul and Minneapolis. (Determined by Dr. Folsom as Achomutes sp., heretofore undescribed in this country.

Missouri O. E. Gahn (September 10): Several specimens of springtails were received from a mushroom grower at Leeds May 1. These were collected from cultivated mushrooms and were determined by Dr. Folsom as Schottella sp., which species according to Dr. Folsom has not been collected heretofore in this country.

S O U T H E R N F I E L D - C R O P I N S E C T S

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

W. E. Hinds (September 20): The sugarcane borer has become moderately abundant throughout the cane belt in the southern third of the State. The prospect is for a total damage below normal, which is 19 per cent of the crop. The parasitism of eggs of Diatraea by Trichogramma minutum Riley has been increasing rapidly during the past month and is now destroying more than 95 per cent of the borer eggs in many localities.

F O R E S T A N D S H A D E - T R E E I N S E C T S

PERIODICAL CICADA (Tibicina septendecim L.)

Illinois

W. P. Flint (September 7): Brood II appeared in Henderson, Warren, Knox, Fulton, McDonough, Hancock, Mason, Schuyler, Adams, Brown, Cass, Morgan, Pike, Scott, and in the edges of Tazewell and Menard Counties, with the heaviest emergence in the western edge of Mason and Fulton Counties. There were possibly scattered individuals a little farther east, but certainly no general appearance.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Ohio

T. H. Parks (September 10): More complaints than usual have been received from the southern and central parts of the State of attacks on evergreens.

E. W. Mendenhall (September 2): General in southwestern Ohio from Columbus south and southwest. It is very bad in several localities in this territory, including Columbus, Springfield, Dayton, and Cincinnati. Arborvitae and other evergreens seem to be their favorite food, but they are found on many deciduous trees and shrubs as well, causing a great deal of damage by defoliation.

Mississippi

R. W. Harned (September 23): Reported as abundant on fig trees at Amory on August 24 and on cedar trees at Duck Hill on August 31.

WHITE-MARKED TUSsock Moth (Hemerocampa leucostigma S. & A.)

Nebraska

M. H. Swenk (September 3): The second brood defoliated the elms quite severely in parts of Lincoln during August.

TENT

GREAT BASIN/CATERPILLAR (Malacosoma fragilis Stretch)

California:

S. Lockwood (August 30): The great basin caterpillar destroyed the foliage of ceanothus and to a lesser degree manzanita over whole hillsides on the southern slope of Mount Shasta near Shasta City, during the latter part of June. The worms were so thick that trains were slowed to a standstill on the grades because of the crushed bodies on the rails. This was overcome by the locomotives being equipped with steam jets to blow the worms from the rails in advance of the wheels. Strawberries and garden peas were devoured also.

HEMLOCK SPANWORM (Ellopiia fiscellaria Guen.)

Michigan

E. I. McDaniel (September 12): For several years the hemlock looper has been destroying trees in the resort region of Michigan. A recent survey made by Mr. Morofsky of this department shows that one plat of 46 acres of forest land containing hemlock, pines, and hardwoods has been seriously attacked at Pentwater. The hemlock is all dead or nearly so and the larvae are feeding on the white, Austrian, Scotch, and jack pines, also on oak, alder, beech, and cherry. The only trees present that are not attacked are maples and locust. The hardwood is evidently being eaten because of the killing of the hemlock and pines. At the time of the survey (September 5) very few larvae and pupae were present, but many adults were to be found.

SATIN MOTH (Stilpnotia salicis L.)

New Hampshire

T. C. Craighead (September 13): On August 22, C. E. Hood and J. E. R. Holbrook of the gipsy moth laboratory noted feeding by the young larvae on the foliage of large trees of the large-toothed aspen, Populus grandidentata Mich., growing under woodland conditions in Kingston. Feeding had been so severe in one small area that the brown skeletonized foliage was noticeable from a considerable distance and here the hibernation webs were very abundant in crevices in the bark. This is the first record the gipsy moth laboratory has of a satin moth infestation occurring in a woodland area in New England.

BEECH

WOOLLY BEECH APHID (Prociphilus imbricator Fitch)

Maryland

J. A. Hyslop (September 22): Only one tree found infested and it but slightly. In the colony was a larva of a

predacious moth and beneath the colony on the trunk of the tree a mass of the fungus Scorias spongiosa Schw.

TWO-LINED PROMINENT (Hamerocampa bilineata Peck.)

Michigan

E. I. McDaniel (September 12): An infestation of about 80 acres near Shelby was reported in 1928. The infestation is spreading quite rapidly and now involves an area about 17 miles long including between 2,000 and 2,500 acres. Larvae this year stripped the beech trees and attacked also some of the oaks. No damage was done to maples.

BIRCH

BIRCH LEAF-MINING SAWFLY (Phyllotoma nemorata Fallén)

General

T. H. Jones (September 20): From letter from Mr. Mussebeck: "Mr. Sheffner and I spent the period September 11 - 14 in an attempt to obtain some further information on the distribution of the introduced birch leaf-mining sawfly. Our observations were restricted to New Hampshire and Vermont in addition to a few points in northeastern Massachusetts. We followed a route along the eastern border of New Hampshire northward through Ossipee and North Conway to Gorham, from there westward to Lancaster, N. H., and St. Joinsbury, Vt., then southward through Barre and Rutland to Bennington, Vt., in the extreme southwestern part of the State, and from Bennington eastward through Brattleboro, Vt., Richmond and Rindge, N. H., and Ashburnham and Groton, Mass., to Melrose. From this it will be apparent that a considerable section of the White Mountain district of New Hampshire, a large part of Vermont, and a small district in southern New Hampshire were covered, in addition to a few points in Massachusetts. Because of the supposed preference of the insect for white birch, we scouted particularly areas where this species is more or less common, but in these districts other species of birch were also examined. Gray birch seemed to us to be almost as favorable a food plant as white birch, and larvae were also found in small numbers mining the leaves of yellow birch. From our hurried observations it appears that it is more abundant in the north and in areas of considerable elevation. At any rate, the heaviest infestations noted were on the hillsides in the White Mountain region of New Hampshire. Only one moderately heavy infestation was found well to the southward at Marlboro, Vt., and this on a hilltop at some elevation. This species was, however, found in small numbers at

many points along the entire route followed, including Chocorua, North Conway, Jackson, Pinkham, Gorham, Hinsdale, Richmond, and Rindge, N. H., Barre, Williamstown, Eastfield, Bethel, Gayssville, Sherburne, South Wallingford, and Marlboro, Vt., and Ashburnham, Groton, and Walkefield, Mass."

Maine

H. B. Peirson (September 24): This insect has assumed epidemic proportions throughout the range of white birch in Maine.

APHIDS (Aphidae)

New Hampshire
and
Massachusetts

J. V. Schaffner, jr. (September 25): Aphids on gray birch and paper birch were reported abundant in southern New Hampshire and Massachusetts. There was much yellowing of birch foliage, very probably owing to these insects.

CYPRESS

CYPRESS TWIG BORER (Phloeosinus cristatus Lec.)

Arizona

O. L. Barnes (September 12): Abundant on Monterey cypress at Thatcher where considerable injury to twigs was observed August 25.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena Schrank)

California

S. Lockwood (August 30): Work of this pest was very obvious on an estate near Berkeley; the middle of August where from 50 to 90 per cent of the elm leaves had been eaten.

A LEAF BEETLE (Callimorpha scalaris Lec.)

Nebraska

M. H. Stryk (September 3): A Kuckolls County correspondent reports under date of August 19 that all of the elm trees in his wood lot had been stripped of leaves.

EUROPEAN ELM SCALE (Gossyparia spuria Mordax)

Ohio

E. W. Mendenhall (September 4): I find some of the elm trees planted on the streets of Columbus severely attacked.

Wisconsin

E. L. Chambers (September 1): A survey recently made indicates that the European elm scale is spreading slowly at Milwaukee, but in Madison the spraying campaign under way seems to be keeping it fairly well under control.

Colorado

C. P. Gillette (September 21): The elm scale is becoming rather common about Denver and is spreading to other localities. A few isolated trees occur in Fort Collins.

HICKORY

HICKORY BARK BEETLE (Scolytus quadrispinosus Say)

Michigan

E. I. McDaniel (September 12): The city forester of Lansing reported yesterday a number of dead hickory trees, mostly of the pig-nut type, in Bancroft Park in Lansing. An examination proved that between 400 and 500 trees were in a dying condition and that enormous numbers of larvae were now present. Many adult beetles are still in the galleries and flying about, although the great mass of beetles seem to be still in the larval stage. Some of the larvae have already excavated the deeper cells in which to pupate.

LARCH

LARCH SAWFLY (Mon. tas. arichsoni Hartig)

Maine

H. B. Peirson (September 12): This insect is becoming numerous on larch in several sections of northern Maine.

MULBERRY

CUCUMBER BEETLES (Diabrotica spp.)

California

R. E. Campbell (September 17): The new growth of mulberry trees on the properties of the American silk factory at San Marcos has been seriously damaged by Diabroticas. D. soror Lec. is by far the most abundant, while D. balteata Lec. is fairly common, and D. trivittata Mann. is occasionally seen.

LOCUST

A BUPRESTID BEETLE (Agrius difficilis Gory)

Colorado

C. P. Gillette (September 21): Becoming very destructive to the honey locusts at Lamar.

GIANT SKIPPER (Ephargyreus tityrus Fab.)

Michigan

E. I. McDaniel (September 12): An unusual occurrence has come to light at Pentwater. Mr. W. F. Morofsky while scouting for other insects happened on to an area of

about 12 acres of black locust trees practically stripped of their foliage by this rather uncommon insect. Larvae are beginning to prepare for pupation.

MAPLE

COTTONY MAPLE SCALE (*Palvinaria vitis* L.)

Indiana J. J. Davis (September 23): Reported abundant on maples at Saratoga on September 10.

Colorado C. P. Gillette (September 21): Seems not to be so abundant in northern Colorado as it was 20 years ago.

OAK

A SPANWORM (*Eilopia fervidaria*, var. *somnaria* Hulst)

Oregon D. C. Mote (August): T. E. Chamberlain reports the oak looper, *E. fervidaria*, var. *somnaria*, as doing considerable damage to oaks in the foothills of the Tillamette Valley.

YELLOW-NECKED CATERPILLAR (*Datana ministra* Drury)

Mississippi R. W. Harned (September 23): Larvae were collected on oaks at Wiggins where they were completely defoliating the trees. Determined by G. Heinrich. Larvae tentatively identified by Mr. Langston were reported as slightly injuring oak trees at Clorith on September 21 by Inspector Jack Milton.

Texas F. L. Thomas (September 24): *Datana ceterpillaria* have been reported on oak at Huntville and College Station.

A MOLE (*Anisota senatoria* S. & A.)

Mississippi R. W. Harned (September 23): On September 9 Inspector J. P. Kishlar sent to this office some larvae collected on oaks with the information that they were completely defoliating the trees in the woods near Wiggins. These larvae were identified by G. Heinrich as *A. senatoria* and *Datana ministra* Drury. Larvae tentatively identified by Mr. Langston as *A. senatoria* S. & A. and *A. virginiana* Drury were reported as severely injuring red oak trees near Gloster on September 13.

PINE

PINE LEAF MINER (Paralechia pinifoliella Chamb.)

Ohio E. W. Mendenhall (September 3): I find the white pine in one of the nurseries in Miami County affected.

PINE BARK APHID (Chermes pinicorticis Fitch)

Wisconsin E. L. Chambers (September 1): Numerous complaints have been received during the past two weeks from all over the State of injuries caused by the pine bark louse and specimens submitted indicated their great abundance.

RED-HEADED PINE SAWFLY (Neodiprion lecontei Fitch)

North Carolina C. H. Brannon (September 4): This insect is causing serious injury to pines in Edgecombe County.

WOOLLY PINE SCALE (Pseudophilippia quaintanii Oshl.)

Ohio E. W. Mendenhall (September 12): A block of about 500 pines at Sugar Grove in Hocking County are badly infested.

SPRUCE

SPRUCE BUDWORM (Harmoloba fumiferana Clem.)

Kentucky W. A. Price (September 20): Moderately abundant on spruce over the State.

SPRUCE GALL APHID (Chermes abietis L.)

Wisconsin E. L. Chambers (September 1): Specimens of the spruce gall aphid were brought in from Fond du Lac, where large numbers of trees (Norway spruce) are reported seriously deformed by this pest.

EASTERN SPRUCE BEETLE (Dendroctonus piceaperda Hopk.)

Maine H. B. Peirson (September 12): There is grave danger of serious outbreaks of this bark beetle on spruce in northern Maine. Areas of infestation are being continually reported.

A TREEVIL (Pissodes rotundatus Lec.)

Michigan E. I. McDaniel (September 4): We have just received a sample of the work in the stem of a small white spruce, Picea canadense, from an ornamental planting near Detroit.

This small tree stem, which measured about $\frac{3}{4}$ in. in diameter, was completely riddled between the bark and the wood by this species, several of which were ready to emerge. A few pupae were present and also several adult beetles which had not yet hardened and taken on their normal color. (There has been some doubt as to the host plant of this borer.)

WHITE-PINE WEEVIL (Pissodes strobi Peck)

Maine

H. B. Peirson (August): I think this is the first authentic report of the white-pine weevil attacking white spruce. Specimens were reared and compared with type material. (Collected at Waterville.)

WILLOW

WILLOW GROVE APHID (Melanoxanthidium smithae Monell)

Indiana

J. J. Davis (September 23): Abundant on willow and annoying at Anderson as reported September 7.

INSECTS ATTACKING GREENHOUSE

AND ORNAMENTAL PLANTS

A WEEVIL (Brachyrhinus cribricollis Gyll.)

California

S. Lockwood (September 27): A weevil new to this State has been found in ornamentals in Los Angeles County. It has been determined as Brachyrhinus cribricollis. It has been found so far in or near the cities of San Fernando, Pasadena, and Montebello. So far the greatest damage has been to privet and Pittosporum tobira. Other hosts in these localities are: cork oak, white oak, Viburnum; Euonymus, Carolina cherry, Pyracantha ladia, carob, escolonia, honeysuckle, jasmine, holly, crataegus, laurustinus, rose and zenia. In two instances where citrus trees were close to privet, some chewed leaves have been observed and a weevil was found at the base of two citrus trees. Marked damage has occurred only to privet and Pittosporum so far.

OBSOLETE WEEVIL (Sciopithes obscurus Horn)

Washington

Wm. W. Baker (August 27): The adults have been seen in two different localities near Puyallup feeding on rhododendron and azaleas and in one of these also on skimmia. One of these places has had an infestation of at least three-years' standing. The leaves are in some cases severely damaged. No very pronounced injury has

been noted due to the work of the larvae.

RED SPIDER (Tetranychus telarius L.)

- Ohio E. W. Mendenhall (September 2): It has been a hard fight during the summer to control the mite in nurseries and about homes where evergreens are grown. It is also noticeable on apple and other fruit trees and maple, oak, and many shade trees.
- Indiana J. J. Davis (September 23): Reported damaging evergreens, especially arborvitae and cedar, at Connersville and Muncie the last of August and early in September.
- Wisconsin E. L. Chambers (September 1): Evergreens throughout the State have suffered severely from the red spider during the past three weeks, owing to prolonged dry weather.
- Nebraska M. H. Swenik (September 3): During the whole of August, which was dry and hot, this insect was very injurious on various kinds of trees in all sections of the State. Spruce, elm, rose, mountain ash, apple, plum, peach, and cherry were reported affected. Especially severe infestations were reported from Douglas, Buffalo, Dundar, and Chase Counties.
- California S. Lockwood (August 30): This pest has done considerable damage to deciduous fruit in the interior valleys. Leaf drop in infested orchards runs up to 75 per cent. Evidence of the work has been observed from Bakersfield north to the upper Sacramento Valley.

CYCLAMEN MITE (Tarsonemus pallidus Banks)

- Wisconsin E. L. Chambers (September 1): Several ranges of chrysanthemums and many cyclamen and geraniums growing in greenhouses in Milwaukee County are being severely injured.

TARNISHED PLANT BUG (Ligaeus pratensis L.)

- Washington C. E. Doucette (September 4): Ten per cent of the buds in a planting of chrysanthemums were so badly injured that no flowers could be expected to develop (in Kings County). Several other greenhouse men have reported that they have been troubled. (September 20): Tarnished plant bugs have been very numerous in flower gardens in Pierce and King Counties, where they have attacked particularly China aster the last three or four weeks and many deformed flowers have resulted. Considerable damage has occurred in aster plantings where flowers are grown for sale. In some instances 30 per cent of the flowers have had to

be discarded.

EUROPEAN EARWIG (Forficula auricularia L.)

Washington Wm. T. Baker (September 2): Injury to dahlias at Montecano but more or less confined to the petals.

Washington R. L. Webster (August 31): I have seen three specimens at Pullman. The first one I picked up on my own porch August 5, 1928. Since that time soon after my return from a trip to the coast, I thought it might have been carried back in blankets used while camping. A second specimen was collected on the college campus, sent to S. E. Crumb at Puyallup and definitely determined as this insect. The third specimen was brought in today by Dr. W. F. E. Heald, of W. S. C.

ELDER CATERPILLAR (Mamestra picta Herr.)

Maine H. B. Peirson (September 2): This insect has assumed epidemic proportions at Augusta, where it is attacking general and flowering plants, such as gladiolus, geranium, etc.

ACACIA

FULLER'S ROSE BEETLE (Pentamerus fulleri Horn)

Connecticut W. E. Britten (September 14): Found on acacia in a greenhouse in Norwalk, which is the first record for Connecticut.

DUMMIEY BUG

STALK BORER (Papaipema nebris nitela Guen.)

Ohio E. W. Mendenhall (September 2): The stalk borer is very abundant in a block of butterfly bush plants (Buddleia) in a nursery in Springfield.

CHRYSANTHEMUM

STREET CLOVER SEED BORER (Elipsois lemniscata Fab.)

Florida J. R. Watson (September 23): Reported as doing much damage to a planting of chrysanthemums near Tampa. This borer attacks ragweed and Bidens leucantha, which undoubtedly are common in the vicinity of the chrysanthemums.

RED BANDED LEAF ROLLER (Julia velutinana Walk.)

Ohio E. W. Mendenhall (September 4): Chrysanthemum plants in a greenhouse at Plain City are infested.

COLEUS

A MEALYBUG (Pseudococcus sp.)

Indiana J. J. Davis (September 23): Abundant and destructive on Coleus at Jeffersonville as reported August 28.

DAHLIAS

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

Washington Wm. W. Baker (September 2): Although this pest has attacked dahlias at Montesano and Elma in the last three years which the writer has worked in this territory the damage is more severe than before. The foliage injury is not serious but the petals are often riddled.

GOLDEN GLOW

GOLDEN GLOW APHID (Macrosiphum rudbeckiae Fitch)

Ohio E. W. Mendenhall (September 3): Golden glow in some of the gardens at Piqua is full of the red composite aphid.

IRIS

IRIS BORER (Macronoctua ornata Grote)

Wisconsin E. I. Chambers (September 1): Iris plantings throughout the southern part of the State are being severely damaged. Several large plantings have as many as 50 per cent of the plants infested.

Iowa C. J. Drake (August 29): Found in considerable numbers in iris beds at Des Moines.

WIREWORMS (Elateridae)

Washington C. F. Doucette (September 18): The largest producer of bulbous iris in the State has had a great deal of difficulty with wireworms. While the bulbs are not destroyed the feeding holes are so unsightly as to make it necessary to refrain from selling such bulbs. The damage has been as high as 30 per cent in a few varieties, but gen-

erally averaged from 10 to 15 per cent. It is considered a serious factor in iris production.

LILAC

LILAC BORER (*Podosesia syringae* Harr.)

Ohio E. T. Mendenhall (September 2): Quite bad in the lilac plants in one of the nurseries in Springfield.

OYSTER-SHELL SCALE (*Lepidosaphes ulmi* L.)

Kentucky W. A. Price (September 20): Moderately abundant on lilac generally.

Colorado C. P. Gillette (September 21): Continues to spread in Colorado, occurring in most of the nurseries about Denver and is very destructive to ash and willow and especially lilac.

NARCISSUS

NARCISSUS BULB FLY (*Merodon equestris* Fab.)

Washington C. F. Doucette (September 16): Infestations have been observed in practically every planting of narcissus in the State. Generally the infestation has been light, between one-half of 1 and 2 per cent, with some exceptions. In one planting of 75,000 bulbs grown in Tacoma, the infestation ranged from 40 to 65 per cent, depending on the variety. This is the most severe infestation I have ever seen. The large infestation was partly due to the fact that these bulbs had been in this field two successive years.

Oregon C. F. Doucette (September 16): Infestations have been observed in several sections producing narcissus bulbs. I have not had an opportunity to study the conditions in Oregon as thoroughly as in Washington, but consider that they are quite similar, as all districts visited showed some infestation. Infestations of 3 per cent were observed in the Tillamook district, one-tenth of 1 per cent in the Columbia River district, and 1 per cent in the Willamette Valley.

BULB FLIES (*Eumerus* spp.)

Washington C. F. Doucette (September 16): In the larger narcissus-producing districts in western Washington the infestations have been noticeably slight, and have not aggre-

gated over one-fifth of 1 per cent. In two plantings only was any excessive infestation found, and in both the particular blocks showing infestation were bulbs that had been weakened by frost injury and sunburn the previous summer, respectively. Infestation on tulips at Sunnydale was 0.08 per cent, in Dutch iris bulbs at Sumner and Bellevue 0.11 and 0.04 per cent respectively, and in St. Brigid anemone corms at Bellevue about 10 per cent. This is the first record of this plant as a host of *Eumerus*.

RHODODENDRON

RHODODENDRON LACEBUG (*Stephanitis rhododendri* Howv.)

Washington Wm. W. Baker (August 27): Fairly thick on some varieties of rhododendron at Puyallup, apparently preferring the red varieties.

SNOWBALL

SNOWBALL APHID (*Anuraphis viburnicola* Gillette)

Washington Wm. W. Baker (September 11): This pest has just recently returned to the snowball. It was present in usual numbers at Puyallup this spring.

YEW

BLACK VINE TEEVIL (*Brachyrhinus sulcatus* Fab.)

Washington Wm. W. Baker (September 7): Leaves of *Taxus* at Puyallup are damaged to some extent, but the infestation is not particularly severe as yet.

INSECTS ATTACKING MAN AND

DOMESTIC ANIMALS

MAN

FLEAS (*Otenocerphalus* spp.)

General T. C. Bishopp (August): Numerous reports of houses infested with dog and cat fleas have come in during August. These reports are about equal in number to those of July. They came largely from the northeastern part of the United States, with the maximum number from Maryland and Pennsylvania.

Iowa C. J. Drake (August 29): Fleas, largely cat and dog, have been very abundant in Iowa this year. They seem to be pretty widely distributed and in several instances were extremely abundant in the basement and first floor of homes.

PUSS CATERPILLAR (Megalopyge opercularis S. & A.)

Mississippi R. W. Harned (September 23): Larvae of Megalopyge, probably opercularis, have attracted considerable attention throughout the State during the past month.

A WATER BUG (Corixidae)

Haiti R. C. Smith (August 28): An unusual flight of a small corixid was observed at lights at Petionville on August 28. Residents stated that they had never seen it before. They swarm around the lights and then drop to the floor or table, making it impossible to sit or eat near a light. So far as is known, it occurred only one night. Many specimens have been sent to Hungerford for determination.

CATTLE

STABLE FLY (Stomoxys calcitrans L.)

Nebraska M. H. Svenk (September 3): Annoyance to cattle continued during August, but not so severely as during July.

HORN FLY (Haematobia irritans L.)

General O. G. Babcock (August 23): The horn fly was not abundant on the eastern slope of the Rocky Mountains. More were observed on the waters of Clear Creek Canyon (altitude ranging from 8,000 to 9,000 feet), approximately 100 to 150 flies to each animal. At this point most showers occurred. In the dry areas of New Mexico the horn fly was not numerous, but east of El Paso, Tex., in districts where recent rains had occurred, the flies were observed to be from ^{1,000} 3,000 per animal. Farther east from the Guadalupe Mountains to Sonora, where the hot area began, and no rains had fallen, the fly was scarce.

REINDEER

MOSQUITOES (Culex sp.)

Alaska L. J. Palmer (August): Mosquitoes were unusually abundant this season and caused considerable loss to reindeer owners. Many fawns were killed and some grown animals. Reindeer and caribou were so reduced in flesh that they

finally died. Some small herds were kept on feed in corrals and smudges kept going day and night to save the animals from complete annihilation. Fur farmers suffered losses and out-of-door workers were terribly annoyed and at times forced to quit work. Farm operations were much interfered with, as it was necessary to keep horses shut up in barns most of the time.

PIGEONS

PIGEON HIPPOBOSCID (Lynchia maura Bigot)

General

F. C. Bishopp (August): This pigeon parasite has been complained of during August by pigeon raisers in South Carolina, Florida, and Texas. In some instances considerable losses were caused.

HOUSEHOLD AND STORED -

PRODUCT INSECTS

TERMITES (Reticulitermes spp.)

Ohio

T. H. Parks (September 23): Moderately abundant over the State; becoming a serious pest, more complaints than usual.

Indiana

J. J. Davis (September 25): Reported on August 26 as damaging house woodwork at Cynthiana.

Kansas

R. L. Parker (September 25): Reported on August 21 in house at Lincoln, on September 10 in house attacking picture frame at Reading; on September 14 in house at Everest; on September 15 in house at Plainville.

Mississippi

D. W. Grimes (September 22): Termites are very abundant in Durant territory.

Arizona

O. L. Barnes (September 26): Several complaints of injuries to houses and shade trees have been received from Phoenix.

California

R. L. Parker (September 25): Termites were reported on September 16 in house at San Gabriel.

JUMPING BULLET GALL (Neuroterus saltatorius Hy. Edw.)

California

S. Lockwood (August 30): Several requests for information regarding this insect have come to this office during the latter part of August. In one case in the city of Sacramento the sidewalk and paving were liberally sprinkled with the jumping galls under an oak tree.

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